

BOTANY.—*Five new grasses from Colombia.*¹ JASON R. SWALLEN, Bureau of Plant Industry. (Communicated by A. S. HITCHCOCK.)

Among the grasses collected by E. P. KILLIP and ALBERT C. SMITH in Colombia in 1926–27, four species are described as new. The fifth was collected by W. A. ARCHER in June, 1930, in Department Antioquia.

***Chusquea tuberculosa* Swallen, sp. nov.**

Culmi dense tuberculosi, 6 mm. crassi, nodis pubescentibus vel villosis; vaginae papillosae; ligula minuta; laminae culmorum basi cordatae, 9–10 cm. longae, 3 cm. latae, ramorum fasciculatae minores, ovatae vel lanceolato-ovatae, glabrae, 2–3 cm. longae, 4–10 mm. latae, marginibus scabris; paniculae patentes, 7–10 cm. longae, 5–6 cm. latae; ramis divergentibus, dense pubescentibus; spiculae appressae, 6–7 mm. longae; glumae obsoletae vel minutae; lemmata sterilia duo, subaequalia, 5 mm. longa; lemma fertile acutum, 7-nervium, 6 mm. longum.

Culms woody and vine-like, solid, very densely and prominently tuberculate, more or less pubescent or villous at the nodes, as much as 6 mm. thick, bearing fascicles of sterile or flowering branches at the nodes, 5–30 cm. long; sheaths papillose-hispid to nearly smooth; ligule minute; blades of the main culm cordate-clasping, 9–10 cm. long, 3 cm. wide, those of the fascicled branches reduced, ovate or ovate-lanceolate, scarcely cordate, 2–3 cm. long, 4–10 mm. wide, all the blades smooth on both surfaces, scabrous on the margins; panicles open, 7–10 cm. long, 5–6 cm. wide, the branches stiffly spreading, the axis and branches densely soft-pilose; spikelets short pediceled, appressed, 6–7 mm. long; glumes obsolete; sterile lemmas two, subequal, 3-nerved, 5 mm. long; fertile lemma acute, 7-nerved, 6 mm. long.

Type in the U. S. National Herbarium, no. 1,353,497, collected on the edge of woods between California and Vetas, alt. 2500 m., Department Santander, Colombia, January 15–22, 1927, by E. P. KILLIP and ALBERT C. SMITH (no. 18005).

Known only from the type collection.

The prominently tuberculate culms are characteristic.

***Neurolepsis mollis* Swallen, sp. nov.**

Culmi robusti, erecti, 1.5–4.5 m. alti; vaginae glabrae, in ore fimbriatae; ligula 1–2 cm. longa; laminae planae, 20–75 cm. longae, 2–4 cm. latae, petiolatae; panicula angusta, stricta, 0.45–1.5 m. longa, ramis pubescentibus, anguste ascendentibus, superioribus approximatis, inferioribus remotis; spiculae valde immaturae, 2 mm. longae, 3-florae, flosculis duobus inferioribus imperfectis; glumae subaequales, obtusae, quam spicula duplo breviores; lemmata firma, acuta vel cuspidata, scaberula.

Culms robust, erect from short knotty rhizomes, 1.5–4.5 m. tall; sheaths smooth, glabrous, at least the lower ones long-fimbriate at the mouth; blades flat, narrowed toward both ends, 20–75 cm. long, 2–4 cm. wide, sparsely pilose above, smooth below, scabrous on the margins, the bases of at least the lower

¹ Received October 5, 1930.

ones indurate and petiole-like, much narrower than the mouth of the sheath; ligule membranaceous, brownish, more or less lacerate above, 1-2 cm. long; panicles narrow, strict, 0.45 to more than 1.5 m. long, the spikelike branches appressed or narrowly ascending, the upper ones short and approximate, the lower distant, as much as 20 cm. long, these bearing rather distant fascicles of appressed branchlets, both the main axis and the branches densely and softly pubescent; spikelets (all immature) about 2 mm. long, three-flowered, the upper floret fertile, the lower two florets sterile; first and second glumes subequal, obtuse, more or less apiculate, about half as long as the spikelet; lemmas firm in texture, acute or minutely cuspidate, scaberulous.

Type in the U. S. National Herbarium, no. 1,351,648, collected in woods in the mountains east of Las Vegas, Department of Santander, Colombia, alt. 3000-3300 m., December 20-21, 1926, by E. P. KILLIP and ALBERT C. SMITH (no. 15830).

The only other specimen of this species seen is KILLIP and SMITH no. 20699, collected at Páramo del Hatico, alt. 2900 m., Department Norte de Santander, Colombia. As both specimens are immature the floral measurements of mature plants may be somewhat larger than those given. The soft dense pubescence on the axis and branches of the panicle is characteristic.

Muhlenbergia erectifolia Swallen, sp. nov.

Perennis caespitosa; culmi erecti, glabri, 15-20 cm. alti; folia basi aggregata; vaginae glabrae vel scaberulae; ligula acuta, 3-5 mm. longa; laminae erectae, rigidae, teretes, scabrae, pungentes, 5-10 cm. longae, basi quam vaginae angustiores; panicula angusta, 5-6 cm. longa, vix laminis longior; spiculae appressae, pedicellis crassis, 1-4 mm. longis; glumae aequales, truncatae, 1-1.3 mm. longae; lemma 2.5 mm. longum, infra pubescens supra scabrum; arista erecta, crassa, scabra, 3-5 mm. longa.

Densely tufted perennial; culms erect, 15-20 cm. tall, glabrous; leaves mostly crowded toward the base; sheaths smooth or somewhat scabrous; ligule membranaceous, acute, 3-5 mm. long; blades erect, rigid, terete, scabrous, pungently pointed, narrower than the sheaths at the base, 5-10 cm. long; panicles narrow, erect, scarcely exceeding the blades, 5-6 cm. long, rather few-flowered, the branches appressed; spikelets appressed to the branches, the pedicels comparatively stout, 1-4 mm. long; glumes equal, 1-1.3 mm. long, truncate, more or less erose, tinged with bronze and purple; lemma 2.5 mm. long, somewhat pubescent below, scabrous toward the summit, tapering into a stout erect scabrous awn 3-5 mm. long.

Type in the U. S. National Herbarium no. 1,353,062, collected on Paramo de Santurbán, near Vetás, alt. 3,950-4,160 m., Department Santander, Colombia, January 17, 1927, by E. P. KILLIP and ALBERT C. SMITH (no. 17470).

Known only from the type collection.

The short terete, pungent blades are unlike those of any other species of this genus.

Panicum longiculme Swallen, sp. nov.

Culmi graciles, erecti vel decumbentes, ad nodos inferiores radicanes, 125 cm. longi, pilosi vel papilloso-pilosi, nodis barbatis; vaginae papilloso-pilosae;

ligula 1-2 mm. longa; laminae 2-5.5 cm. longae, 3-5 mm. latae, pubescentes, marginibus scabris; panicula 5 cm. longa, 4.5 cm. lata, ramis patentibus, axillis villosis; spiculae 2.4-2.6 mm. longae, pilosae; gluma prima acuta, 1-1.2 mm. longa.

Culms slender, wiry, erect or long-decumbent at the base and rooting at the lower nodes, as much as 125 cm. long, pilose or papillose-pilose, the nodes mostly densely retrorsely bearded; sheaths much shorter than the internodes, papillose-pilose; ligule hairy, 1-2 mm. long; blades flat 2-5.5 cm. long, 3-5 mm. wide with a white, scabrous, cartilaginous margin, softly pubescent on both surfaces; panicles few flowered, 5 cm. long, nearly as broad as long, the branches mostly widely spreading, the axis pilose; spikelets 2.4-2.6 mm. long, sparsely pubescent; first glume acute, 1-1.2 mm. long, 1-nerved; fruit pointed, equaling the second glume and sterile lemma.

Type in the U. S. National Herbarium, no. 1,444,529, collected in mountains above Bello, Quebrada del Ato, Department Antioquia, Colombia, June 17, 1930, by W. A. ARCHER (no. 160).

This species is allied to *P. venezuelae* Hack., but differs in having spikelets evenly distributed in the panicle, and fruit as long as the second glume and sterile lemma.

Ichnanthus angustifolius Swallen, sp. nov.

Probabiliter perennis; culmi graciles, glabri vel pubescentes, basi decumbentes radicanes, 110 cm. longi, internodis inferioribus brevibus, superioribus elongatis; vaginae pilosae vel papilloso-pilosae internodos aequantes vel 2-3-plo breviores; ligula obsoleta; laminae sublineares, acuminatae, pilosae, basi subcordatae, 7-9 cm. longae, 3-5 mm. latae; panicula longe exserta, 8 cm. longa, ramis ascendentibus vel patentibus, pilosis; spiculae 3.5 mm. longae, pilosae, appressae, solitariae vel binae; gluma prima acuta vel acuminata 1.8-3.5 mm. longa; gluma secunda acuta, lemma sterile aequans; lemma sterile obtusum; lemma fertile 2.4 mm. longum, basi appendicibus obsoletis.

Probably perennial; culms slender, straggling, long-decumbent at the base and with stilt roots at some of the nodes, more than 110 cm. long, glabrous, or sparsely pubescent, the lower internodes short, the upper ones elongate; lower sheaths as long as the internodes, the upper ones $1/3$ - $1/2$ as long as the internodes, pilose or papillose-pilose, especially on the margin and the collar; ligule nearly obsolete; blades linear or linear-lanceolate, acuminate, subcordate 7-9 cm. long, 3-5 mm. wide, pilose on both surfaces; panicle long-exserted, 8 cm. long, the axis and the ascending or spreading branches mostly short-pilose; spikelets 3.5 mm. long, more or less pilose or papillose-pilose, solitary or in pairs, appressed to the branches, the pedicel of the lower one of a pair less than 1 mm., that of the upper about 3 mm. long; first glume 3-nerved, acute or acuminate, from half as long to as long as the spikelet; second glume and sterile lemma equal, 5-nerved, the glume acute, the sterile lemma obtusish; fertile lemma 2.4 mm. long, the wings reduced to scars.

Type in the U. S. National Herbarium, no. 1,351,267, collected in woods, on the northern slope of Mesa de los Santos, alt. 1000-1500 m., Department Santander, Colombia, Dec. 11-15, 1926, by E. P. KILLIP and ALBERT C. SMITH (no. 15385).

Known only from the type collection.

The long-decumbent culms with stilt roots and narrow blades are typical.